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TWO CALIFORNIA PHALANGIDS.

By NATHAN BANKS.

Eurybunus spinosus, sp. nov.

Length 7 mm.; femur I 3 mm. Grayish brown above, a blackish mark on each side of base of abdomen outlining a paler central stripe; sides and venter gray, minutely dotted with silvery; eye tubercle with a white stripe above; femora I and III brown, with a pale ring on middle; tibiæ I and III brown, mottled with pale; femora and tibiæ II and IV whitish, with irregular brown spots; all metatarsi pale, tarsi ringed with brown at false articulations; palpi pale, spotted with brown, black at tips. Eye-tubercle low, smooth; two small elevations on anterior margin of cephalothorax, but bearing no spinules; a transverse row of small spinules behind eye-tubercle; about eight transverse rows of spinules on the abdomen; femora and patellæ tipped with some spinules; legs and palpi clothed with short stiff black bristles; no false articulation in metatarsus I, one in tibia II; last joint of palpus straight, once and one-half as long as preceding joint, palpal claw without teeth.

Habitat: Los Angeles, California.

Mitopus californicus, sp. nov.

Length 7 mm.; femur I, 4 mm. Grayish above, indistinctly mottled with white and brown; vase-mark not distinct; femora and tibiæ with brown bands near base and tip. Some spinules grouped in front, and some on each side of cephalothorax eye-tubercle about its diameter from anterior margin, two rows of spinules above; basal joints of legs with five rows of prominent spinules; and a row on each segment of the body; palpi short, last joint slightly curved, longer than three plus four, palpal claw smooth; no false articulations in any tibiæ, one in metatarsus I; tibia II much longer than metatarsus II.

Habitat: Los Angeles, California.

Similar to the eastern *M. montanus* Banks, but not so strikingly marked, and tibia II is much longer than metatarsus II (a trifle shorter in *M. montanus*).

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NOTES ON DREPANID LARVÆ.

By HARRISON G. DYAR, A. M.

We have four genera of this interesting little family in North America, and each is represented by probably but a single species; at least there seem to be only four different larvæ.* The moths greatly resemble Geometrids in appearance and habits, but differ in venation. The larvæ differ from all their allies in the absence of the last pair of

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*See Proc. Boston Soc. Nat. Hist. XXIV, 492, where Dr. Packard quotes the observations of Mr. S. L. Elliot, that the larvæ of *O. rosea* and *O. irrorata* are alike.

feet and the presence of a longer or shorter tail-like process at the end of the last segment. The crotchets of the abdominal feet are peculiar, as they are arranged in a complete circle, such as is found in the Microlepidoptera, except that the crotchets on the outer half of the foot differ from those on the inner half. This seems to show that the structure is a case of secondary adaptation.

The eggs are indistinguishable from Geometrid eggs.

Oreta rosea *Walker.*

This is the most specialized larva. It is curious that the moth should belong to a genus found in India, yet there seems no essential structural difference.

The little larvæ may be found not uncommonly on all the species of viburnum. When newly hatched, the setæ can be made out, arranged in the normal manner of the Noctuina, iv behind the spiracle, vi absent. There are no secondary hairs, though the body is minutely roughened. The setæ are very short with enlarged tips. After the first moult the primary setæ become obscured by secondary ones, and later the larva is much roughened and its surface greatly modified. The larva lives freely exposed.

Platypteryx arcuata *Walker.*

As regards the length of "tail" this larva comes next, though in other characters it is more generalized than the following species. It has been fully described by Dr. Packard, but I believe the organ with which it produces its scratching sound has not been mentioned. The larva curls up the edge of a leaf of birch or alder by drawing threads over it, and covers the exposed upper part with a coarse netting. When disturbed, it contracts its body repeatedly, producing a scratching sound. The sound is caused by the friction on the leaf of two stiff shovel-shaped setæ, situated at the end of the last segment below the tail-like process. The primary setæ are distinct in the last stage, though supplemented by secondary ones.

Falcaria bilineata *Packard.*

This larva lives freely exposed on the leaves or stem of the white birch. The "tail" is short and upturned. The setæ are as in the preceding. I have recently described it.

Eudeilinea herminiata *Guenée.*

These curious little larvæ are common on the bushy species of dogwood (*Cornus stolonifera, C. paniculata*). They live singly, spinning two leaves together, within which they remain concealed. The leaves are in no wise folded, but two naturally overlapping ones are united by several short, stout cross-bands of silk. The larvæ feed only on the undermost leaves, and on account of these habits there is no sign of their presence on the bushes, unless one attempts to separate the apparently simply overlapping leaves.

Egg.—Laid two to seven together on the under side of a leaf; elliptical, much flattened above and below, reticulations narrow, regular, somewhat rounded, with short pile at the angles. The surface of the cells between seems smooth. Color pale whitish green, shining. Size .7x .5x .4 mm.

Larva.—Head bilobed, rounded, clypeus large, shining, shagreened; color whitish, jaws and a shade below apex of each lobe in front yellow brown; two transverse bands connected by a strong band on the side of the head behind ocelli; lower band from base of jaw to ocelli, upper above clypeus, but obsolete centrally in the yellow cloud below apex. Body flattened, thoracic feet small, colorless, hairy below; abdominal feet on joints 7–10, normal as to the crotchets on the inside of the planta, but about six occur also on the outside; the inner row is dense, the hooks of different lengths, while those on the outside are single and remote; no anal feet, the fleshy plate produced into a short conic process. Setæ fine, short and very obscure, except at the extremities. Body smooth, translucent whitish with a green shade dorsally especially in the dorsal vessel; tracheal line evident by transparency, white; cervical shield hemispherical, whitish, shining, a gray shade at the lateral corners. Above and before the spiracle on joint 2 is a shining black elliptical spot, bearing two setæ, suggesting a parasitic attack to which this insect is subject.

Pupa.—Formed between leaves on the ground, with a few silken threads. When leaving the bushes to pupate the larvæ become suffused with reddish pink on the back. The pupa is dark brown, a little blackish tinged on the more exposed parts and especially on the veins of the wing-cases; a patch of white bloom on the collar and vertex of head. Three movable incisures. Length 10 mm.

Found commonly in the Adirondacks, White Mountains and in Western Maine.

Eudeilinea is the most generalized form of our Drepanids, and if we adopt Prof. Comstock's family Auzatidæ, in which he places this genus, we may use its characters to define the family from the larva. The Auzatidæ then agree with the Drepanidæ in all essential respects, except in the absence of the definite secondary setæ of the latter. The difference is mainly one of degree. In *Eudeilinea* the setæ have the normal arrangement for the Noctuina, but there are no secondary hairs anywhere above the base of the leg. The seta associated with iii in *Platypteryx* and *Falcaria* is therefore wanting here.

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ON THE LARVÆ OF THE HEPIALIDÆ.

PLATES III AND IV.

By A. S. PACKARD.

Of the form and structure of the larvæ of this family very little is known. A brief notice of the egg of *Hepialus argenteomaculatus*, by P. H. Gosse, appeared in his "Canadian Naturalist" (p. 248, 1840). In 1888 Prof. D. S. Kellicott published in Entomologica Americana (iv. p. 153) notes on the larva, which he obtained in abundance in Central New York, from the roots and stems of *Alnus incana*, and showed that the larva probably requires three years to complete its growth. He received the pupa, which disclosed the moth June 2d. In commenting on his paper, Prof. J. B. Smith stated his belief that it lived in the oak, willow and poplar.

In the following year Prof. Kellicott described the mature larva and the pupa, adding further details as to its habits. The eggs are laid the first week in June; the caterpillars live for two years in the roots, and as the third year advances they work upward more or less into the stems; in the spring of the third year they bore out to the surface, partially or loosely plug the opening with chips and transform; pupation occurs about May 1 (in Oswego County, N. Y.), the moths emerging a month later. Mr. Kellicott writes me that he did not preserve either the larva or pupa, of which good figures are much needed. The eggs were not described.

In his note on the habits of *Hepialus thule* (Can. Ent. Vol. xxv, Dec. 1893, p. 297), Mr. H. H. Lyman describes its eggs, of which the enormous number of 2,151 were laid, and this seems to be the first account which we have of any eggs of this family, the works of European authors being apparently defective as regards the habits and life-history of the species of this group. The eggs are said to be "even, oval, slightly flattened on the lower side, perfectly smooth, but dull,